

**REMARKS**

Claims 1 to 5 are currently pending in the application. Claims 1 to 5 are currently rejected under 35 U.S.C. §§ 102(b), 102(e) and 103(a). Claims 1 and 3 through 5 are also the subject of a provisional rejection for obviousness type double patenting over copending patent Application No. 10/844,640.

Applicant appreciates the withdrawal of the rejections based on Lin *et al.*

**Double Patenting Rejection**

Applicant respectfully requests that the double patenting rejection over copending Application No. 10/844,640 be held in abeyance until patentable claims have been identified in both applications.

**Rejections under 35 U.S.C. §§ 102(b), 102(e) and 103(a)**

The Examiner has cited three separate references as individually rendering Claims 1 through 5 either anticipated or obvious. As the Examiner has cited the references individually, Applicant will address the references in the same manner.

Claim 1 is the sole independent claim, and recites a resin composition suitable for processing into a biaxially oriented polypropylene film. The composition consists essentially of about 70% to about 95% by weight of a polypropylene homopolymer having less than 3% by weight xylene solubles, and about 5% to about 30% by weight of an ethylene/propylene random copolymer containing from about 0.5% to about 7.0% ethylene by weight.

**Rejection over U.S. Patent No. 6,639,018**

Claims 1 through 5 have been rejected under 35 U.S.C. § 102(e) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,639,018 to Yunoki *et al.* ("Yunoki"). Applicant traverses this rejection.

Claim 1 was discussed above.

Yunoki discloses a composition comprising 20 to 98 parts by weight of a polymer A and 2 to 80 parts by weight of a polymer B. The polymer A is disclosed as having an intrinsic viscosity measured in tetralin at 135° C of 2.0 to 5 dl/g, and a melting temperature of 140 to 162° C. The polymer B is disclosed as having an intrinsic viscosity measured in tetralin at 135° C of 0.8 to 1.8 dl/g, and a melting temperature of 160 to 162° C.

Yunoki further discloses that either of polymer A or polymer B may be selected from homopolymers of polypropylene, random copolymers of propylene and ethylene, random copolymers of propylene and C<sub>4</sub> to C<sub>12</sub>  $\alpha$ -olefins, and random copolymers of propylene, ethylene and a C<sub>4</sub> to C<sub>12</sub>  $\alpha$ -olefin. Yunoki states that the polymer A is preferably a propylene based random copolymer, but does not specify preferred comonomers. Yunoki, col. 3, lns. 51-53. Further, it is disclosed that polymer B is preferably a polypropylene homopolymer. Yunoki, col. 4, lns. 22-23.

As demonstrated in Applicant's response to the previous Office Action Yunoki provides no specific guidance regarding the content of xylene solubles in either of polymer A or B when those polymers are polypropylene homopolymers. Table 1 of Yunoki only discloses several isolated examples of polypropylene homopolymers having xylene solubles of less than 3 percent. Further, as previously demonstrated, Yunoki contains no specific guidance on combinations of homopolymers with random copolymers of ethylene and propylene. Yunoki only discloses one isolated example of an ethylene/propylene random copolymer containing 3.7 percent ethylene, and one blend of a polypropylene homopolymer with that ethylene/propylene random copolymer. However, as previously stated, none of the examples shows a propylene homopolymer blended with an ethylene/propylene random copolymer in the proportions recited in Claim 1. As a result, Yunoki does not disclose any

example having each and every limitation recited in Claim 1. “[F]or a reference to anticipate [a claim] every element of the claimed invention must be identically shown in the reference.” *In re Bond*, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). “These elements *must be arranged as in the claim under review*.” *Id.* (emphasis added).

Further, MPEP 2131.03 states, that where a finding of anticipation is based on an overlapping of claimed ranges with ranges disclosed in a reference and the reference has no specific example falling within the claimed range, the prior art reference must disclose the claimed invention with “sufficient specificity to constitute an anticipation under the statute.” As recently reiterated by the CAFC in *Atofina v. Great Lakes Chemical Corp.*, 441 F.3d 991, 78 USPQ.2d 1417 (Fed. Cir. 2006), while a single species may anticipate a genus of which it is a part, “[i]t is well established that the disclosure of a genus in the prior art is not necessarily a disclosure of every species within the genus.” The *Atofina* case was discussed in detail in Applicant’s response to the previous Office Action. Applicant respectfully submits that situation here is the same as in *Atofina*. The disclosure in Yunoki is insufficient to support a finding of anticipation of Claim 1. This is especially true given that the instant specification discloses improved processability in making oriented films from the claimed blends. In contrast, Yunoki is specifically directed to improving the impact resistance of injection molded parts.

The Examiner asserts that Yunoki recites the claimed invention with sufficient specificity to anticipate Claim 1. Applicant respectfully disagrees. Nowhere does Yunoki disclose the instant composition as claimed. As Examiner notes, Applicant recognizes that Yunoki discloses isolated elements that fall within the ranges recited in Claim 1. However, single examples of individual components do not constitute guidance on the combination of those components other than with respect to the examples shown. In general, Yunoki

discloses broadly a composition comprising a polymer A and a polymer B. The composition may comprise from 20 to 98 percent polymer A, and from 2 to 80 percent of polymer B.

Applicant respectfully submits that, contrary to the Examiner's position, it is hard to envision how these ranges could be any more non-specific. With regard to the composition of polymers A and B, Yunoki is similarly vague. Both components may be homopolymers. Conversely, both components may be co-polymers. Where one or both components are co-polymers, they may be a copolymer of propylene with ethylene, or another  $\alpha$ -olefin having 4 to 12 carbon atoms, or with ethylene and another  $\alpha$ -olefin having 4 to 12 carbon atoms.

Again, Applicant respectfully submits that this disclosure by Yunoki is non-specific.

Further, Yunoki does not discuss the importance of any of these properties, let alone the importance of any of them in the production of biaxially oriented films.

Regarding the assertion of obviousness, the Examiner has provided no reasoning as to why Claim 1 would be obvious over the disclosure of Yunoki. Nonetheless, Applicant further respectfully submits that Yunoki does not disclose the claimed compositions with sufficient specificity to render them obvious. As stated above, Yunoki does not disclose any examples within the claimed ranges. Further, Yunoki contains absolutely no guidance regarding the content of xylene solubles in the homopolymers it discloses. Finally, Yunoki contains no indication of the superior processability of the instantly claimed blends in the manufacture of oriented films.

MPEP 2144.05 states that in order to establish obviousness based on optimization of a range disclosed in the prior art the variable "must first be recognized as a result-effective variable. i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). As stated

above, there is no recognition in Yunoki of the importance of xylene soluble content in a homopolymer, the ethylene content in a random copolymer, or the ratio of a homopolymer and random copolymer in the processability of BOPP films. There is simply no guidance in Yunoki that would lead one of ordinary skill in the art to the compositions recited in Claim 1 out of the expansive of the disclosure in Yunoki. Applicant therefore respectfully submits that it would not have been obvious for one having ordinary skill in the art to modify the broad, non-specific teachings of Yunoki to provide the blends of polypropylene homopolymers having less than 3 percent xylene solubles with the ethylene/propylene random copolymers as recited in Claim 1.

Given the utter lack of direction provided by Yunoki concerning the xylene solubles content of its polypropylene homopolymers, and the lack of specificity regarding the blends of polymers A and B, Applicant respectfully submits that Claim 1 can be neither anticipated by nor rendered obvious by Yunoki. Further, since dependent Claims 2 through 5 depend from Claim 1, Applicant respectfully submits that those claims also cannot be anticipated or obvious.

Notwithstanding the fact that Yunoki does not anticipate or render obvious any of the instant claims, Applicant respectfully submits herewith an Affidavit under 37 CFR § 1.131 by inventor Dr. Sehyun Kim establishing a date of invention of at least as early as July 16, 2001. Since this date is prior to the effective date of Yunoki as prior art, and because Yunoki and the instant application do not claim the same invention, Applicant respectfully submits that Yunoki is removed as prior art.

Rejection over U.S. Patent No. 6,346,580

Claims 1 through 5 have been rejected under 35 U.S.C. § 102(b) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,346,580 to Fujita *et al.* ("Fujita"). Applicant traverses this rejection.

Claim 1 was discussed above.

Fujita discloses a polymer composition comprising 5 to 50 percent by weight of a polypropylene homopolymer A and 50 to 95 percent by weight of a polymer B. Polymer A is disclosed as having an intrinsic viscosity measured in tetralin at 135° C of at least 1.2 dl/g and a heptane insoluble portion of 5.0 to 50 percent. Polymer B is disclosed as being either a polypropylene homopolymer (B1) having an isotactic pentad fraction of 0.970 or more, or blend of at least 65 percent by weight of polymer (B1) with up to 35 percent by weight of an ethylene/propylene random copolymer (B2).

It is asserted that when polymer B as disclosed by Fujita comprises a blend of (B1) and (B2) that Fujita anticipates or renders obvious Claim 1.

Applicant respectfully directs Examiner to column 8, lines 22 to 26 of Fujita. This section of Fujita explicitly states that the copolymers of Fujita contain from 20 to 60 percent ethylene. It is apparent that although Fujita states throughout that its copolymers are random copolymers, they are in fact EP rubber, as evidenced by this disclosure. In support of this position, Applicant submits selected pages from the Polypropylene Handbook, *Moore et al.*, © Carl Hanser Verlag, Munich Vienna New York, 1996. At page 5, a comparison of random copolymers and impact copolymers is provided. As shown, impact copolymers comprises a blend of a propylene homopolymer and ethylene propylene rubber, which has a much higher ethylene content than a random copolymer. Applicant respectfully submits that the description of the co-polymers (B2) in Fujita corresponds to ethylene propylene rubber,

making its blends impact copolymers. This conclusion is buttressed by reference to Example 6 at column 13, lines 20 to 51. The Example discloses an ethylene/propylene copolymer that is a blend of a propylene homopolymer and an ethylene propylene “random copolymer” where the total ethylene content of the composition is 4.7 percent (lines 40-41) and the content of “random copolymer” in the composition is 17.3 percent (lines 41-43). Applicant respectfully submits that this translates to an ethylene content in the “random copolymer” of approximately 27 percent ( $4.7/0.173 = 27.16$ ). This is consistent with the disclosure at column 8 and the description in the Polypropylene Handbook. Applicant apologizes for any confusion resulting from having not previously pointed this out.

In contrast, Claim 1 recites a composition consisting essentially of 70 to 95 percent by weight of a polypropylene homopolymer having a xylene soluble content of less than 3 percent, and 5 to 30 percent by weight of an ethylene/propylene random copolymer. The random copolymer contains from 0.5 to 7 percent ethylene. Applicant therefore respectfully submits that Claim 1 cannot be anticipated by or rendered obvious by Fujita.

Reconsideration is respectfully requested.

Rejection over U.S. Patent No. 6,225,411

Claims 1 through 5 have been rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,225,411 to Dang *et al.* (“Dang”). Applicant traverses this rejection.

Claim 1 was discussed above.

Dang discloses a composition comprising (1) a propylene homopolymer or copolymer having an isotactic index of greater than 90, and (2) a propylene homopolymer or copolymer having a crystallinity of less than 24 percent, made with a metallocene catalyst. Where the polymer (1) or (2) is a copolymer the comonomer content is less than 10 percent of ethylene or a C<sub>4</sub> to C<sub>8</sub>  $\alpha$ -olefin.

Dang discloses the isotactic index of its polymers as being the percent of polymer insoluble in xylene. Dang, col. 4, lns. 18-34. Since Dang discloses an isotactic index as low as 90 it necessarily embraces homopolymers having a xylene soluble content as high as 10 percent. Further, in the example provided by Dang, the i-PP portion of the blend (polymer (1)) has an isotactic index of 95.4, which corresponds to a xylene soluble content of 4.6 percent. Although the xylene soluble content of the m-PP portion of the blend (polymer (2)) is not explicitly addressed, it is disclosed as having a crystallinity of less than 24 percent. Applicant respectfully submits that a polymer of such low crystallinity would possess a high xylene solubles content.

Further, the only examples provided by Dang are blends of two polypropylene homopolymers. Therefore, as with Yunoki, Dang does not disclose an example within the range of Claim 1. As with Yunoki, Dang does not discuss or recognize the importance of the variables recited in Claim 1 as “results effective variables” in the processing of BOPP films. Applicant therefore respectfully submits that it would not be obvious to modify the general disclosure of Dang to obtain the compositions as recited in Claim 1. Applicant therefore respectfully submits that Dang’s general disclosure does not provide sufficient specificity to support a *prima facie* case of obviousness of Claim 1. Since Claims 2 through 5 depend from Claim 1, Applicant further respectfully submits that those claims also are not obvious over Dang. Reconsideration is respectfully requested.

Nonetheless, with respect to Claim 2, Dang does not disclose each and every element of the claim. Claim 2 recites the further limitation wherein the polypropylene homopolymer has a crystallinity of at least 55%. The only discussion of crystallinity in Dang is regarding polymer (2), which has a crystallinity of less than 24%. Applicant submits that, independent



of the fact that Claim 1 is not obvious, since Dang does not disclose every feature of Claim 2, that claim cannot be obvious over Dang. Reconsideration is respectfully requested.

### **CONCLUSION**

Applicant believes that the foregoing remarks have overcome or rendered moot all grounds for rejection or objection. There being no other rejections or objections, Applicant believes that the application is in a condition for allowance. Applicant therefore respectfully requests prompt action on the claims and allowance of the application. If the Examiner believes that personal communication will expedite prosecution of the application, the Examiner is invited to telephone Applicant's undersigned attorney directly.

### **AUTHORIZATION**

Applicant believes that no extension of time is required to make submission of this response timely. However, in the event that an extension of time is required, Applicant hereby submits a petition for such extension of time as may be necessary to make this response timely. The Commissioner is hereby authorized to charge the necessary fees to deposit account No. 50-0573. A duplicate of this authorization is enclosed.

Respectfully Submitted,

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